



# ***“ Manual Cut-Sheet “***

***for***

***nsn-2840-01-237-0356***

***“Flight Safety Critical Aircraft Part”***

***First Article Rqmt's and Instructions with New  
Source Qualification Rqmt's for ESA Approval.***

FIRST ARTICLE REQUIREMENTS <small>(AFMCI 64-110, AFMCI 23-102 and FAR Part 9, Sub Part 9.3) (Additional Instructions on Page 3)</small>			1. DATE
2. P/R/MIPR NUMBER	3. PART NUMBER <div style="text-align: center; font-weight: bold;">4068639</div>	4. NSN <div style="text-align: center; font-weight: bold;">2840-01-237-0356PT</div>	
5. FIRST ARTICLE QUANTITY THE FIRST ARTICLE IS <div style="text-align: center; font-weight: bold;">3</div> UNIT(S) OF LOT/ITEM <div style="text-align: center; font-weight: bold;">1</div>			
AND WILL BE: <input type="checkbox"/> PART OF PRODUCTION QUANTITY <input checked="" type="checkbox"/> IN ADDITION TO PRODUCTION QUANTITY			
6. ARTICLES <input type="checkbox"/> WILL <input checked="" type="checkbox"/> WILL NOT SERVE AS A MANUFACTURING STANDARD		7. LONG LEAD TIME ITEMS <input type="checkbox"/> REQUIRED <input checked="" type="checkbox"/> NOT REQUIRED <small>(See FAR 52.209-3 or -4, alternate II)</small>	
8. SPECIAL REQUIREMENT/PRODUCTION FACILITIES <small>(See FAR 52.209-3 or -4 Alternate II)</small> <input checked="" type="checkbox"/> REQUIRED <input type="checkbox"/> NOT REQUIRED  "The First Article offered must be manufactured at the facilities in which that item is to be produced under the contract, or if the First Article is a component not manufactured by the contractor, such component must be manufactured at the facilities in which the component is to be produced for the contract. A certification to this effect must accompany each First Article which is offered."			
9. TEST/INSPECTION REQUIREMENTS  A. <input checked="" type="checkbox"/> CONTRACTOR TESTING <input type="checkbox"/> GOVERNMENT TESTING  Performance or other characteristics which the First Articles must meet are <u>identified in Pratt &amp; Whitney drawing 4068639 and sub-tier drawings and specifications</u>  B. The detailed technical requirements for First Article approval tests are contained in <u>Block 12 of this form</u>  <small>(Cite Spec and Para number)</small>  C. <input checked="" type="checkbox"/> TEST PLAN REQUIRED (1) DD Form 1423 ELIN _____ (2) Delivery due <u>30</u> calendar days from date of contract. (3) Number of days for government approval/disapproval <u>45</u> days.  D. Contractor's notification to ACO and <u>PCO</u> <small>(Requesting Activity)</small> of test time and location due <u>10</u> days prior to start of testing.  E. <input checked="" type="checkbox"/> TEST REPORT REQUIRED (1) DD Form 1423 ELIN _____ (2) Due <u>120</u> calendar days from date of contract. (3) Forwarded to <u>PCO and then to USAF DLA 339 focal point in-turn</u> (4) Government written notice of approval/disapproval due <u>60</u> days after receipt of contractor's report.		F. FIRST ARTICLE DELIVERY:  (1) Due within _____ calendar days from date contract. (2) Notify _____ calendar days prior to shipment. (3) Delivered to government at _____ _____ <small>(Set Forth Consignee and Address)</small> (4) Government written notice of approval/disapproval within _____ days after receipt of first article package.  G. Estimated cost of government testing/inspection evaluation. \$ _____	
10. DISPOSITION OF FIRST ARTICLES			
<input type="checkbox"/> Approved First Articles will be forwarded to _____  <input type="checkbox"/> _____ <small>(insert quantity)</small> First Articles will be expended in testing. Residual components of disapproved First Articles _____ will be returned to the contractor. _____ will be retained by _____ pending disposition instructions from the contractor.  First Articles will be installed on aircraft/equipment to determine proper fit function. Approved article will remain on the aircraft/equipment and will not be forwarded to USAF Supply, but will be considered part of the contract quantity.		<input type="checkbox"/> Disapproved First Articles will be returned to the contractor/ <input type="checkbox"/> will be retained by _____ pending disposition instructions from the contractor  <input type="checkbox"/> On purchase requests designated as direct shipments the following disposition will apply. (NOTE: Always applicable on Foreign Military Sales (FMS)).  a. Approved First Articles will be returned to the contractor for shipment with production item. b. Disposition of disapproved First Articles will remain the same as marked above.  <input checked="" type="checkbox"/> Other Disposition: <u>See block 12 of form</u>	

# 11. CONDITION(S) FOR WAIVER OF FIRST ARTICLE APPROVAL

- a. ☒ Offerors who have previously furnished production quantities of the same or similar article to the prime contractor for delivery to the ☒ Government, ☒ DoD, ☒ Air Force.
- b. ☐ Offerors currently in production of the same or similar article for a \_\_\_\_\_ Government, \_\_\_\_\_ DoD, \_\_\_\_\_ Air Force contract and who have received First Article approval under the existing contract.
- c. ☒ Offerors who have previously furnished production quantities of the same or similar articles to the ☒ Government, ☒ DoD, ☒ Air Force, provided articles thus furnished, have exhibited satisfactory performance in service in the opinion of the Air Force.
- d. ☒ Provided not more than 36 months have elapsed since completion of the contract.
- e. ☐ First Article testing will not be waived.
- f. ☒ See Remarks in block 12 below.

NOTE TO BUYER: UNDER CONDITIONS A AND C ABOVE, THE COGNIZANT ENGINEERING ACTIVITY WILL DECIDE WHETHER OR NOT THE ITEM HAS EXHIBITED SATISFACTORY PERFORMANCE IN SERVICE AND PREPARE AND RETAIN SUPPORTING DOCUMENTATION TO FULLY JUSTIFY THIS DECISION. THE BUYER MUST SOLICIT DUAL PRICES (That is, both with and without requirement for first article approval) AND MUST FURNISH THE COGNIZANT ENGINEERING ACTIVITY WITH THE FOLLOWING INFORMATION ON THE PREVIOUSLY SUPPLIED ARTICLE:

A. PROCURING OFFICE      B. CONTRACT NUMBER      C. DATE OF CONTRACT      D. SPECIFICATION NUMBER AND REVISION

## 12. REMARKS

9.B. First article test requirements shall include:

- Verification of all dimensional and surface texture requirements of P&W drawing 4068639 and sub-tier.
- Verification of conformance to the inspection requirements of QAD4068638. Inspection(s) shall be performed by a Pratt & Whitney or SA-ALC/LPFE approved source for the specific inspection as identified in the approved test plan.
- Verification of material properties in accordance with AMS 4215 and PWA 331. Testing shall be performed by a Pratt & Whitney or SA-ALC/LPFE approved source for this testing as identified in the approved test plan.
- Verification of conformance to PWA 830-1 and AMS 2470.

10. Disposition of First Articles:

- Approved first article(s) will be retained at the contractor's facility for reconditioning (if necessary) with final acceptance the same as for production items. If a first article is expended in testing, approval of first article will constitute acceptance.
- Disapproved first article(s) shall be retained at the contractor's facility, unless specified otherwise by the PCO.

11. First article testing is waived if offeror is the prime contractor, Pratt & Whitney.

13. COGNIZANT ENG ORGANIZATION RESPONSIBLE FOR CONDUCTING AND/OR APPROVING TEST (Name, Organization, Phone)

Lilly Sartor, SA-ALC/LPFE, (210) 925-0792

14. PR INITIATOR (Name, Organization, Phone)

# CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved  
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0701-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

<b>A. CONTRACT LINE ITEM NO.</b>	<b>B. EXHIBIT</b>	<b>C. CATEGORY:</b> TDP _____ TM _____ OTHER _____
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<b>D. SYSTEM/ITEM</b> F100-PW-100/-200 Engines	<b>E. CONTRACT/PR NO.</b>	<b>F. CONTRACTOR</b>
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<b>1. DATA ITEM NO.</b> A001	<b>2. TITLE OF DATA ITEM</b> Contractor's Configuration Management Plan	<b>3. SUBTITLE</b> Nsn-2840-01-237-0356 Noun: Front Gearbox Housing Assembly Pre-Production / First Article Plan
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<b>4. AUTHORITY (Data Acquisition Document No.)</b> DI-CMAN-80858 / T	<b>5. CONTRACT REFERENCE</b>	<b>6. REQUIRING OFFICE</b> DSCR-JLTB
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<b>7. DD 250 REQ</b> SD	<b>9. DIST STATEMENT REQUIRED</b>	<b>10. FREQUENCY</b> 1Time	<b>12. DATE OF FIRST SUBMISSION</b> 30DAC	<b>14. DISTRIBUTION</b>
<b>8. APP CODE</b> N/A	<b>11. AS OF DATE</b> A	<b>13. DATE OF SUBSEQUENT SUBMISSION</b> N/A	<b>15. AS OF DATE</b> N/A	

<b>16. REMARKS</b>	<b>17. PRICE GROUP</b>
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Nsn-2840-01-237-0356 , Part# 4068639 (77445).

Block 4. Tailored:

The Contract Awardee shall provide a plan for approval that ensures all drawing and specification requirements are complied with prior to First Article sample manufacture. The Plan shall include the "equipment and facilities" used to verify all drawing(s), specifications, and process requirements. As a minimum, the Plan shall address the following criteria:

(a). A list of all drawing dimensions, surface texture, etc..., to be inspected and the equipment to be used for verification of each dimension, surface texture, etc... An actual drawing(s) shall be submitted with the Plan that correlates the dimensions on the drawing(s) to those identified on the list.

(b). A plan to verify that all non-destructive inspections are met.

(c). A plan to verify that all visual inspection requirements are met.

(d). A plan to verify material properties which shall include material properties, metallurgical properties, and chemical compositions.

(e). A plan to ensure that all manufacturing processes are performed by the Original Equipment Manufacturer(OEM), Pratt and Whitney, certified vendors.

(f). A plan to ensure that the forging / casting source is OEM approved for the specific forging / casting requirement, as applicable.

(g). The Plan shall identify all external sources for applicable material and process requirements, as specified under OC-ALC/LPFR source approval.

(h). The Plan shall identify GFE, GFM, and Tooling requirements if applicable.

(i). The Plan shall identify all aspects of Quality Assurance such as policies, organization, planning, procedures control, responsibilities, and interfaces including calibration, inspection and testing related criteria.

Additional guidelines for this Plan are contained in AFMC Form 260, Engineering Instructions, and LPF-QAR-001.

Block 7. The "Pre-Production / FAT Plan" shall be submitted to OC-ALC for evaluation and approval. Copy shall be submitted to the local DCM and PCO.

Block 14. Distribution as follows: Copy of the contract shall be provided with the Plan to;

1. DCM - QAR , Vendor DCM Office
2. Defense Supply Center Richmond (DSCR)  
Attn: DSCR-JLPA-PIV  
8000 Jefferson Davis Highway  
Richmond, VA 23297-5878
3. OC-ALC/LPFRB  
3001 Staff Drive  
Annex-4, Post 1AG1-115  
Tinker AFB, OK 73145-3031

<b>G. PREPARED BY</b> Joseph Desyk	<b>H. DATE</b> 07-09-2002	<b>I. APPROVED BY</b> Joseph Desyk	<b>J. DATE</b> 07-09-2002
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# CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved  
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0701-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

<b>A. CONTRACT LINE ITEM NO.</b>	<b>B. EXHIBIT</b>	<b>C. CATEGORY:</b> TDP _____ TM _____ OTHER _____
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<b>D. SYSTEM/ITEM</b> F100-PW-100/-200 Engines	<b>E. CONTRACT/PR NO.</b>	<b>F. CONTRACTOR</b>
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<b>1. DATA ITEM NO.</b> A002	<b>2. TITLE OF DATA ITEM</b> Test / Inspection Report	<b>3. SUBTITLE</b> Nsn-2840-01-237-0356 Noun: Front Gearbox Housing Assembly First Article Test / Inspection Report
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<b>4. AUTHORITY (Data Acquisition Document No.)</b> DI-NDTI-80809B / T	<b>5. CONTRACT REFERENCE</b>	<b>6. REQUIRING OFFICE</b> DSCR-JLTB
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<b>7. DD 250 REQ</b> SD	<b>9. DIST STATEMENT REQUIRED</b> A	<b>10. FREQUENCY</b> 1Time	<b>12. DATE OF FIRST SUBMISSION</b> 30DATC	<b>14. DISTRIBUTION</b>							
<b>8. APP CODE</b> N/A	<b>11. AS OF DATE</b> See Block 16	<b>13. DATE OF SUBSEQUENT SUBMISSION</b> N/A	<table border="1"> <tr> <th rowspan="2">a. ADDRESSEE</th> <th colspan="3">b. COPIES</th> </tr> <tr> <th>Draft</th> <th>Reg</th> <th>Final</th> </tr> </table>		a. ADDRESSEE	b. COPIES			Draft	Reg	Final
a. ADDRESSEE	b. COPIES										
	Draft	Reg	Final								

<b>16. REMARKS</b> Nsn-2840-01-237-0356 , Part# 4068639 (77445).	<table border="1"> <tr> <td>DCM - QAR</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>Vendor DCM</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DSCR-JLPA PCO</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>Richmond, VA</td> <td></td> <td></td> <td></td> </tr> <tr> <td>OC-ALC/LPFRB</td> <td>0</td> <td>2</td> <td>0</td> </tr> <tr> <td>Tinker AFB, OK</td> <td></td> <td></td> <td></td> </tr> </table>	DCM - QAR	0	0	1	Vendor DCM				DSCR-JLPA PCO	0	0	1	Richmond, VA				OC-ALC/LPFRB	0	2	0	Tinker AFB, OK			
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DSCR-JLPA PCO	0	0	1																						
Richmond, VA																									
OC-ALC/LPFRB	0	2	0																						
Tinker AFB, OK																									

Block 4. Tailored:

The First Article Test / Inspection Report shall satisfy all the requirements in the approved Pre-Production / First Article Test Plan. All drawing requirements must be satisfied including dimensions, visual inspections, non-destructive inspections, manufacturing processes, as well as material requirements. The Test Report shall identify the sub-vendor(s) utilized to perform the manufacturing and inspection processes as well as proof that the sub-vendor(s) are OEM(Pratt and Whitney) certified to perform the processes. A copy of the process sheets used to manufacture the First Articles shall be included in the Test Report.

Additional guidelines for the Test Report are contained in LPF-QAR-003.

DID-Element 10.2.6.4.2 Test / inspection results. Shall include certification(s) of material and process(es), material shall be acquired and external process(es) to be performed by Pratt and Whitney approved sources and labs.

Block 7. The Report shall be submitted to OC-ALC/LPFRB for evaluation and approval. Copy shall be submitted to the local DCM Office and DSCR-PCO.

Block 11. Report is due no later than 220-days after contract award.

Block 14. Distribution as follows: Copy of the contract and drawing(s) shall be provided with the First Article Test Report to:

1. DCM - QAR , Vendor DCM Office
2. Defense Supply Center Richmond(DSCR)  
Attn: DSCR-JLPA-PIV  
8000 Jefferson Davis Highway  
Richmond, VA 23297-5878
3. OC-ALC/LPFRB  
3001 Staff Drive  
Annex-4, Post 1AG1-115  
Tinker AFB, OK 73145-3031

<b>G. PREPARED BY</b> Joseph Lesyk	<b>H. DATE</b> 07-09-2002	<b>I. APPROVED BY</b> Joseph Lesyk	<b>J. DATE</b> 07-09-2002
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<b>17. PRICE GROUP</b>
<b>18. ESTIMATED TOTAL PRICE</b>

**INSTRUCTIONS FOR COMPLETING DD FORM 1423**  
(See DoD 5010.12-M for detailed instructions.)

**FOR GOVERNMENT PERSONNEL**

**Item A.** Self-explanatory.

**Item B.** Self-explanatory.

**Item C.** Mark (X) appropriate category: TDP - Technical Data Package; TM - Technical Manual; Other - other category of data, such as "Provisioning," "Configuration Management," etc.

**Item D.** Enter name of system/item being acquired that data will support.

**Item E.** Self-explanatory (to be filled in after contract award).

**Item F.** Self-explanatory (to be filled in after contract award).

**Item G.** Signature of preparer of CDRL.

**Item H.** Date CDRL was prepared.

**Item I.** Signature of CDRL approval authority.

**Item J.** Date CDRL was approved.

**Item 1.** See DoD FAR Supplement Subpart 4.71 for proper numbering.

**Item 2.** Enter title as it appears on data acquisition document cited in Item 4.

**Item 3.** Enter subtitle of data item for further definition of data item (optional entry).

**Item 4.** Enter Data Item Description (DID) number, military specification number, or military standard number listed in DoD 5010.12-L (AMS DL), or one-time DID number, that defines data content and format requirements.

**Item 5.** Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number).

**Item 6.** Enter technical office responsible for ensuring adequacy of the data item.

**Item 7.** Specify requirement for inspection/acceptance of the data item by the Government.

**Item 8.** Specify requirement for approval of a draft before preparation of the final data item.

**Item 9.** For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref. DoDD 5230.24).

**Item 10.** Specify number of times data items are to be delivered.

**Item 11.** Specify as-of date of data item, when applicable.

**Item 12.** Specify when first submittal is required.

**Item 13.** Specify when subsequent submittals are required, when applicable.

**Item 14.** Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16.

**Item 15.** Enter total number of draft/final copies to be delivered.

**Item 16.** Use for additional/clarifying information for Items 1 through 15. Examples are: Tailoring of documents cited in Item 4; Clarification of submittal dates in Items 12 and 13; Explanation of reproducible copies in Item 14.; Desired medium for delivery of the data item.

**FOR THE CONTRACTOR**

**Item 17.** Specify appropriate price group from one of the following groups of effort in developing estimated prices for each data item listed on the DD Form 1423.

a. Group I. Definition - Data which is not otherwise essential to the contractor's performance of the primary contracted effort (production, development, testing, and administration) but which is required by DD Form 1423.

Estimated Price - Costs to be included under Group I are those applicable to preparing and assembling the data item in conformance with Government requirements, and the administrative and other expenses related to reproducing and delivering such data items to the Government.

b. Group II. Definition - Data which is essential to the performance of the primary contracted effort but the contractor is required to perform additional work to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, or quality of the data item.

Estimated Price - Costs to be included under Group II are those incurred over and above the cost of the essential data item without conforming to Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

c. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, and quality of the data item.

Estimated Price - Costs to be included under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

d. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

**Item 18.** For each data item, enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.

## ENGINEERING INSTRUCTIONS

1. Full-scale production is not authorized prior to approval of requisite first article test reports by the F100 Fighter Propulsion System Division Engineering Branch (Government Engineering Source Authority (ESA)). Instructions regarding the specific test requirements, number of articles, the disposition thereof, and the conditions for waiver are identified in the First Article Test Requirements for P/N 4068639.
2. The inspection methods to be applied to the first articles and production parts shall be documented on inspection method sheets, or inspection route sheets and operation sketches which identify the inspection, inspection sequence, significant process parameters, equipment and tooling, gages and acceptance/rejection criteria used. This documentation shall be submitted to the Government ESA through the PCO for approval with the first article test plan and requisite first articles.
3. All first articles shall be produced using the same material, processes, equipment, and tooling to be used for manufacture of the production articles.
4. The following significant supplies/processes required in the fabrication of first articles and production articles shall be obtained from/performed by the sources approved by the Government ESA as identified in the letter granting engineering source approval. If the letter granting source approval did not document the approved sources, the Supplier shall identify the sources to be employed in the solicitation and provide documented evidence the sources are currently approved by Pratt & Whitney for the respective processes. The Government ESA shall make the determination for approval of the sources identified.  
  
Casting per AMS 4215 and PWA 331  
X-Ray Inspection per XRM Code 1  
Fluorescent Penetrant Inspection per FPM Code 1  
Surface Treatment per PWA 830-1/AMS 2470
5. Change of sources for material and significant processes is prohibited without the expressed written consent of the Government ESA. Change in address of a source shall be construed as a change of source.
6. The manufacturing methodology applied in the fabrication of the first articles shall be documented on the manufacturing process sheets which identify the processes, process sequence, significant process parameters, equipment and tooling used. These process sheets shall be submitted to the Government ESA through the PCO with the first article test reports.
7. All production articles supplied in fulfillment of a Government contract shall be fabricated in accordance with the manufacturing process sheets used in the successful manufacture of the first

article test items. Changes to the operating parameters or sequence of significant manufacturing process prior to the expressed written consent of the Government ESA are prohibited.

8. The use of sub-vendors, manufacturing process sheets, or inspection method sheets approved by the Government ESA in no way guarantees the integrity of products/services provided, nor does it relieve the Supplier of the responsibility of delivering components which comply with contractual requirements. The term Supplier, as used in this context, refers to the source contracted by the Government to deliver the finished product.

9. Sampling of non-destructive inspections other than dimensional is prohibited.

10. Sampling of dimensional inspections of critical characteristics is prohibited.

**END**



GENERAL QUALITY ASSURANCE REQUIREMENTS  
FOR  
F100 ENGINE FC/DC BREAKOUT COMPONENTS

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1. APPLICATION.

These requirements apply to all F100 engine Fracture Critical Parts (FCP) and Durability Critical Parts (DCP).

2. PURPOSE.

2.1. This document establishes the minimum technical requirements the Offeror must satisfy to obtain engineering approval of their quality system for FCP/DCP applications. All documentation provided as evidence of compliance with requirements specified herein must be in English and in the Inch-Pound system. Engineering approval of Offeror's Quality Assurance System shall be valid for three years from the date of the OC-ALC letter notifying the contractor of approval.

3. REQUIREMENTS.

3.1. The Offeror must provide a Quality Assurance Manual that accurately portrays their current quality assurance system.

3.1.1. The Quality Assurance System must meet or exceed the requirements as described in this document and must satisfy one of the following:

3.1.1.1. Certified to ISO 9002 by the American National Standards Institute (ANSI) or the International Standards Organization (ISO) in Geneva, Switzerland, or

3.1.1.2. Previously certified within the last three (3) years to MIL-I-45208A plus paragraphs 3.1 through 3.5, 5.1, 5.2, 6.1, and 6.2 of MIL-Q-9858A by the DCMC or other appropriate government Quality Assurance Representative, or

3.1.1.3. Approved by the Original Equipment Manufacturer (OEM).

3.1.2. Proof of certification/approval must be provided and must be dated within the last three years. The decision to approve or disapprove the Quality Assurance System shall only be made after a thorough review of the Offeror's Quality Assurance Manual by the cognizant engineering authority, OC-ALC/LPFR.

3.2. The Offeror must provide OEM documentation identifying the specific conditions/restrictions (i.e., specific P/Ns, components, processes, or material this status applies to, production testing required for material release, testing the supplier is authorized to perform, etc.) imposed by the OEM.

3.3. The Offeror must provide proof that their quality assurance plan has placed emphasis upon controlling processes to prevent generation of non-conformances and is supplemented by sufficient inspections or tests to assure effective process control.

3.4. The Offeror must provide procedures/specifications governing the control of significant processes proposed for use in the fabrication/repair of the approval item for assuring that:

GENERAL QUALITY ASSURANCE REQUIREMENTS  
FOR  
F100 ENGINE FC/DC BREAKOUT COMPONENTS

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3.4.1. Only Purchaser approved sources are used for raw material, significant processes, and major sub-components and adequate consideration is given to a source's capability and performance prior to placing an order.

3.4.2. The quality acceptance standards imposed in routine production acceptance both in-house and by sub-vendors are complete and approved by an OEM and the test methods employed in routine production acceptance are sufficient to verify compliance with these standards.

3.4.3. Fabrication performed in-house and by sub-vendors is accomplished in accordance with work instructions specified in manufacturing/repair process sheets, schedules, and/or technical control plans which define the exact sequence of all production operations and all process variables and all critical parameters of manufacturing/repair operations which may directly affect material structure, mechanical properties, surface finish and/or direction or lay of the cutting action. The procedure shall also assure that work instructions have been approved by the customer.

3.4.4. All inspection of characteristics, which serves as the basis for final acceptance of a characteristic, including in-process inspections, are performed in accordance with work instructions specified in inspection method sheets which define all characteristics specified on the applicable OEM drawings and Quality Assurance Documents (QAD's), the classification of each characteristic, the Acceptable Quality Level (AQL) for each classification of characteristic, sample size, frequency of inspection, the specific inspection methodology to be utilized, and the required instrumentation. The procedure(s) shall also assure that all inspection method sheets have been approved by the customer.

3.4.5. The Offeror must provide evidence that internal and sub-vendor audits have occurred, are adequate to insure quality of the end item and are addressed in the Offeror's Quality Plan. Specific Offeror audit procedures/guidelines which pertain to process and product audits shall, as a minimum substantiate the following:

3.4.5.1. Processes accomplished in-house shall be performed in accordance with work instructions specified in Manufacturing/Repair Process Sheets, Schedules, and/or Technical Control Plans which define the sequence of all production operations and all aspects and parameters of manufacturing/repair operations which may directly affect material structure, grain flow, mechanical properties, surface finish and/or direction or lay of the cutting action. The procedure(s) shall also assure that process sheets have been approved by the Purchaser or the OEM.

3.4.5.2. All inspection of characteristics, which serves as the basis for final acceptance of a characteristic, including in-process inspections, are performed in accordance with work instructions specified in Inspection Method Sheets which define all characteristics specified on the applicable OEM drawings and Quality Assurance Documents (QADs), the classification of each characteristic, the Acceptable Quality Lever (AQL) for each classification of characteristic, sample size, frequency of inspection, the specific inspection methodology to be utilized, and the required instrumentation. The procedure(s) shall also assure that all inspection method sheets have been approved by the Purchaser or OEM.

GENERAL QUALITY ASSURANCE REQUIREMENTS  
FOR  
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3.4.5.3. Unauthorized changes to work instructions which might directly affect the material structure, grain flow, mechanical properties, surface finish and/or lay of the cutting action or accuracy or reliability of component inspection must be approved the cognizant Fighter Propulsion System, Engineering Source Approval Section prior to production. The procedure(s) shall include responsibility, methods, and procedures for identifying significant changes in inspection methods or criteria, coordination internal approval of such changes, and assuring changes are not introduced in the production cycle without formal Purchaser approval. The procedure(s) must address processes performed by sub vendors as well as those performed in-house.

3.4.5.4. Strict adherence to the sequence, parameters, and all other significant process variables of manufacturing/repair operations defined on manufacturing/repair process sheets approved by the customer is maintained both in-house and at sub-vendors' facilities. Specific procedures for auditing and/or controlling requisite significant processes must be provided.

3.4.5.5. Dedicated equipment is properly maintained and calibrated IAW ISO 10012-1 and is capable of adequately performing its intended application.

3.4.5.6. General housekeeping and manufacturing/repair practices shall be addressed in the Quality Plan to ensure they do not adversely affect the quality of the end product.

3.4.5.7. In- process monitoring of principal manufacturing/repair and inspection practices, operating parameters, and process parameters which directly affect material structure, grain flow, mechanical properties, surface finish, lay of the material, and/or critical dimensions, and which are indicators of process effectiveness and efficiency. It shall include responsibility, methods and procedures for identifying variables and parameters to be monitored, developing and approving work instructions, identification of trends which signal process problems, and initiation of corrective actions.

3.4.6. Procedures for assuring that certificates of test or conformance provided by sub-vendors of raw material and significant processes are complete and supported by process data and numerical test results from an OEM-approved laboratory for the requisite testing, are representative of material received, and the material is in conformance with Purchaser requirements.

3.4.7. Adequate records are retained for documenting sub-vendor lists, sub-vendor quality ratings, layout inspection reports, all Purchaser and OEM approvals, component traceability, and objective evidence of conformance to product, process, and quality acceptance requirements; and are available to the Purchaser upon request.

3.4.7.1. Provide procedures for assuring the traceability of the repair history for repaired components.

3.4.8. Evidence of a system for controlling non-conforming material to ensure:

3.4.8.1. The classification of all non-conforming characteristics in terms of critical, major, and minor is approved by the Purchaser.

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3.4.8.2. Final disposition of all non-conforming critical and major characteristics including rework and repair is approved by the Purchaser prior to implementation.

3.4.8.3. Effective control of non-conforming material at sub-vendor facilities.

3.5. The Offeror must provide a specific Quality Plan as described in the applicable quality system of paragraph 3.1 and IAW OC-ALC/LPFR documentation as requested in the specific Qualification Requirement.

3.5.1. The Offeror's Quality Plan shall address specifically how the Offeror intends to ensure the ongoing quality of the approval part and processes required in the manufacture/repair thereof and how this has been accomplished on similar components. The Quality Plan shall include the organization responsible for determining the requirements, factors typically considered in the determination, testing and surveillance conducted on sub vendors, testing laboratories used and the specific testing typically performed, subcontract quality requirements, and the specific paragraphs of the quality assurance document(s) which govern such aspects.

----- **END OF DOCUMENT** -----

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1. This document provides guidelines for the preparation of first article test plans/test reports for F100 engine parts where referenced within the first article data of a contract.
2. FIRST ARTICLE QUANTITY. The quantity of first articles shall be per the contract. The quantity of articles allowed for destructive testing, in accordance with the contract, shall be tested per the first article procedure in its entirety, to include the destructive testing. The remaining articles shall only be tested per the nondestructive portions of the procedure.
3. TESTING REQUIREMENTS.
  - 3.1. Testing shall consist of, but shall not be limited to, the verification of the following.
    - 3.1.1. Dimensional conformance including finish requirements.
    - 3.1.2. Conformance to non-destructive inspection requirements (FPI, Ultra-sonic, Eddy Current, X-ray, visual)
    - 3.1.3. Conformance of material properties to include mechanical, metallurgical and chemical.
    - 3.1.4. Conformance to other required processes, specifications, and standards listed on the drawing including sub-tier specifications and standards, special requirements as described in the engineering instructions (EI), quality plans, etc.
  - 3.2. First articles shall be serialized. Serial Numbers are to be identified prior to commencement of testing unless otherwise specified.
  - 3.3. Dimensional Inspection.
    - 3.3.1. All dimensions, as listed on the assembly drawing and detail drawings, to include drawing notes, shall be measured where possible on all first articles 100% (no sampling allowed).
    - 3.3.2. A tabular format shall be used with drawing dimension, tolerance, measurement, and instrument/gage/tooling/serial number used.
    - 3.3.3. All tooling and gaging used for inspection and acceptance/rejection of first articles shall have calibrations from a laboratory traceable to NIST and in accordance with ISO 10012-1 (formerly MIL-STD-45662), listed in a (tooling & gaging table) table, table shall include nomenclature, serial number, calibration frequency, next calibration date, range, least increment, and accuracy. Listing shall also include alignment tools and constraint fixtures.
    - 3.3.4. Inspection results shall be presented in a table showing the feature measured, dimension and tolerance, actual reading and gage serial number used.
  - 3.4. Nondestructive Inspections (NDI), including Fluorescent Penetrant Inspections (FPI), Ultrasonic Testing (UT), Eddy Current (EC), Radiographic Testing (x-ray), and visual inspections, shall meet the following:

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- 3.4.1. All first articles shall receive 100% of the inspections identified on the QAD. Sampling shall not be allowed.
- 3.4.2. NDI shall be per the applicable specification(s).
- 3.4.3. Sources used shall be Pratt&Whitney approved per the OC-ALC/LPFR letter granting source approval to the contractor.
- 3.4.4. NDI results shall be presented in a table showing the feature inspected, acceptance/rejection criteria used, results and gage/master serial number used. In cases where photographic standards within a VIS specification are applied to an NDI, the inspection report shall include a copy.
- 3.4.5. Inspection Masters/Transfer Masters shall have current calibrations. A copy of the calibration(s) shall be included into the report.
- 3.4.6. Level III or Level II inspectors, as applicable, shall be required. A copy of the inspector's certification(s) shall be included into the report.
- 3.5. Visual Inspections shall include:
- 3.5.1. Specific visual inspections per a Pratt&Whitney Visual Inspection Standard (VIS) document shall be called out of the applicable VIS and cited as specific inspections.
- 3.5.2. Visual inspection results shall be presented in a table showing the feature inspected, acceptance/rejection criteria used, results, and gage/master serial number used (as applicable).
- 3.5.3. In cases where photographic standards within the VIS are used, the inspection report shall include a copy.
- 3.6. Material properties testing shall include mechanical properties, metallurgical properties, and chemical composition tests, as applicable, per the material specifications and the following:
- 3.6.1. Composition, heat treat condition, and other characteristics/properties, as listed in the technical requirements section, acceptance section, and/or quality sections of the specification(s) so as to verify that the materials and processes are sound, clean, and free of imperfections detrimental to the performance of the part or assemblies.
- 3.6.2. In some cases a material suppliers certification will not be sufficient and the Contractor shall have redundant testing performed.
- 3.6.3. Metallurgical microanalysis, as applicable, for raw materials, weldments, brazements, and coatings shall be conducted. Results shall include the complete laboratory report including photomicrographs.
- 3.6.4. Mechanical testing, as applicable, per manufacturing specifications and the drawing(s).

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3.6.5. In cases where the applicable specifications require test reports, these shall accompany the First Article Test Report (FATR).

4. SUBMITTAL.

4.1. The First Article Test Plan (FATP) shall be delivered to the Contracting Officer in accordance with the schedule as listed in the contract, or Form DD1423. The FATP shall provide a detailed description of specific testing instructions to be used. Generalized instructions will not be acceptable.

4.2. The First Article Test Report (FATR) shall be delivered to the Contracting Officer in accordance with the schedule as listed in the contract, or Form DD1423. All laboratory test results, including those resultant from testing conducted at the contractor's facility and including sub-vendor testing, shall be provided with the FATR in their complete form as provided by the testing laboratory(ies).

5. DISPOSITION OF PARTS.

5.1. When required by the contract, the remnants from destructive testing shall be delivered with the First Article Test Report.

5.2. When required by the contract and following the completion of non-destructive testing, one article shall be delivered to the Contracting Officer and packaged in accordance with contract requirements. Marking on the package shall be **UNSERVICEABLE - Condition Code "R"**. Deliver this part with the First Article Test Report. The other(s) shall be handled in accordance with the contract.

6. GENERAL REQUIREMENTS.

6.1. All First Articles and all Production Articles shall be fabricated from material whose metallurgical state is in compliance with the drawing requirements, as well as all sub-tier specifications and standards referenced therein.

6.2. All First Articles and all Production Articles shall be new manufactured under this contract. No items manufactured under previous contracts shall be delivered without approval.

6.3. The subcontractors previously identified by the contractor as sources to be employed, to include laboratory testing, shall be the only sources used. If the contractor wishes to employ a subcontractor other than previously identified, they shall substantiate that the new source is OEM approved for the specific testing required. A change in the address of a source shall be construed as a change of source. Employment of alternate sources shall only be authorized by OC-ALC/LPFR.

6.4. Engineering Instructions shall take precedence over all other technical instructions.

----- **END OF DOCUMENT** -----

## **QUALIFICATION REQUIREMENTS FOR MANUFACTURING**

### **1. APPLICATION.**

1.1 This qualification requirement applies to all F100-PW-100/200/220/E/229 engine Front Gearbox Housings identified in Appendix A.

### **2. SCOPE.**

2.1 This document establishes the minimum technical requirements which prospective sources must satisfy in order to obtain engineering source approval for the specified applications. Conditions of waiver are identified in LPF-QR-002. All documentation provided as evidence of compliance with requirements specified herein must be in English.

2.2 Engineering source approval shall be valid for three years from the date of the cognizant Government Engineering Source Authority (ESA) letter notifying the contractor of engineering source approval. Approved sources which have not delivered or been contracted by the Government to deliver the approval item during this period shall be required to resubstantiate their capability. Resubstantiation shall involve documenting that no significant changes to process location, sequence, or parameters have occurred, and no significant quality deficiencies are awaiting corrective action. Significant changes or unresolved quality deficiencies may result in additional testing, or revocation of source approval status, depending on the nature and extent of the changes and/or quality deficiencies.

2.3 Prospective sources are advised that this component is a durability critical part (DCP).

### **3. REFERENCE DOCUMENTS**

3.1 LPF-QR-001: BASIC TECHNICAL DATA PACKAGE REQUIREMENTS FOR FCP/DCP Definitions of terms used are specified in this document.

3.2 LPF-QR-002: CONDITIONS OF WAIVER FOR FRACTURE CRITICAL/DURABILITY CRITICAL PARTS

3.3 LPF-QAR-001: GENERAL QUALITY ASSURANCE REQUIREMENTS FOR F100 ENGINE FCP/DCP BREAKOUT COMPONENTS

### **4. CONTRACTOR RESPONSIBILITY STANDARDS: (FAR 9-104)**

4.1 Offerors must submit a complete technical data package on all similar components as specified in LPF-QR-001.



4.2 Offerors must submit a complete set of drawings as specified in LPF-QR-001.

4.3 General standards as specified in FAR 9-104.1 apply.

4.4 Special standards as specified in FAR 9-104.2 apply.

4.4.1 The specific special standards to be applied are Category 1 Offeror (**approval item for P&W**) and Category 2 Offeror (**similar component for an OEM**) as specified in LPF-QR-001.

## **5. PROOF OF CAPABILITY: (FAR 9.105-1, FAR 9.200, & AFLCR 800-10)**

5.1 Proof of satisfactory manufacture of production quantities of the approval item or a similar component within the last three years for P&W.

5.1.1 If approval is sought under Category II, the "similar" component must be a gearbox housing which satisfies the following criteria for similarity:

5.1.1.1 Used on the gearbox of a proven high thrust aircraft turbofan or turbojet engine.

5.1.1.2 Fabricated of AMS 4215 or similar aluminum alloy. Consideration of similar aluminum alloys is contingent upon the material being characterized by a comparable machinability rating and exhibits the same sensitivity to the process parameters required in manufacturing.

5.1.1.3 Illustrates the ability of the Offeror, in conjunction with their subvendors, to: 1) perform all requisite significant manufacturing processes and 2) maintain requisite tolerances and surface finishes.

5.1.2 Multiple components may be used to demonstrate compliance with 5.1.1 and subparagraphs provided that they satisfy the requirements of 5.1.1 and were produced for an OEM.

5.2 The Offeror shall substantiate general proof of capability with documentation which is tailored to the requirements of 5.1 and which satisfies the basic technical data package requirements specified in LPF-QR-001.

5.3 Identify all sources of casting per AMS 4215 and PWA 331, anodic treatment, radiographic inspection, and fluorescent penetrant inspection (FPI) to be employed in the production of the approval item for the Government including the specific operations to be performed by each source, and the address of the plant where operations are to be performed. Processes and subcomponents to be performed or produced in-house by the Offeror shall be identified as such. This requirement also applies to Category I Offerors as

well. All sources are subject to approval by the cognizant Fighter Propulsion System Division Engineering Section. Evidence that a proposed subvendor is a P&W LCS Supplier is not in itself sufficient to justify approval. Approval shall be based as follows:

5.3.1 The Offeror shall substantiate that the casting source is approved by an OEM for the part number specific casting.

5.3.2 The Offeror shall substantiate that sources to be employed for radiographic inspection of casting, including themselves, are approved by P&W to conduct radiographic inspection per XRM Code 1 and are in possession of the latest revisions of P&W specifications XRM Code 1, XRM Master, PWA 331, and applicable gauge and calibration masters. Evidence of approval shall include a copy of the official P&W XRM Quality System certification, the P&W certification of the nondestructive testing technique sheet which includes all restrictions and conditions imposed by P&W.

5.3.3 The Offeror shall substantiate that source to be employed for anodic treatment, including themselves are approved by P&W for AMS 2470.

5.3.4 The Offeror shall substantiate that sources to be employed for fluorescent penetrant inspection (FPI), of raw material and finished part, including themselves, are approved by PWA to perform FPI per FPM Code 1. Evidence of approval shall include a copy of the official PWA certification of the FPM Quality System and PWA certification of the nondestructive testing technique sheets, inspection method sheets, or inspection procedures.

5.4 The Offeror shall provide evidence that the quality assurance system and available expertise which currently exists within the Supplier's facility, is capable of establishing and maintaining effective process control, and otherwise ensuring the ongoing quality of all material, major subcomponents, and significant processes produced/performed in-house or by subvendors. Evidence shall comply with the following criteria:

5.4.1 A copy of latest document(s) which describe and govern the quality assurance system in effect at the Offeror's facility(ies). If provided within the last year and no significant changes have been incorporated, this requirement may be waived. However, the cognizant engineering activity for the F100 engine, reserves the right to request an additional copy in the event the previous submittal cannot be located.

5.4.2 Substantiation that Offeror quality procedures satisfy the requirements of LPF-QAR-001.

5.4.3 Samples of contractual requirements previously imposed by the Offeror on sources for castings, surface treatments, nondestructive inspection, and laboratory testing. This requirement may be waived for processes to be performed in-house. In addition, prospective offerors shall provide sample flowdown quality requirements for casting sources, previously imposed on casting suppliers.

5.4.4 Sample reports documenting the results of system, process, and product audits previously conducted by the Offeror in-house and at subvendor's facilities. Sample audit reports shall encompass casting and laboratory testing suppliers. The Offeror shall also specify the frequency of the audits and provide the specific procedures, guidelines, and/or checklists used to conduct the audits.

5.4.5 Sample test reports reflecting overtesting/overinspection conducted by or under the direction of the Offeror, for verifying certificates of test or conformance provided by subvendors, or in-house production. The testing shall verify that certificates are complete and supported by process data and numerical test results from an OEM-approved laboratory for the requisite testing, are representative of material received, and that the material is in conformance with purchaser requirements. Sample test reports shall be provided for casting and correlation of laboratory testing. In event the overtesting is subcontracted, the Offeror shall provide a sample statement of work previously used to obtain testing from an independent laboratory.

1. APPLICATION.

This specification applies to all F100 engine Fracture Critical Parts (FCP) and Durability Critical Parts (DCP).

2. PURPOSE.

2.1. This document is a supplement to established Qualification Requirements (QR) tailored to a specific part(s) for the purpose of defining the basic documentation required of prospective sources to substantiate proof of capability. It is not all inclusive and prospective sources shall note that satisfaction of all requirements defined by the specific QR applicable to the approval part is required to obtain engineering source approval. The basic documentation submitted by prospective sources shall be tailored to the requirements of the specific QR applicable to the approval part which defines specific criteria for proof of capability. All documentation provided as evidence of compliance with requirements specified herein shall be in English and in the Inch-Pound system.

2.2. QR's applicable to a specific part shall be made available to prospective sources upon request to OC-ALC/BC or the appropriate Defense Logistic Agency (DLA) activity for parts which are not the subject of open solicitations. Requests concerning the latter shall be addressed to the responsible procuring activity.

2.3. Prospective sources are advised that source approval consideration on most Fracture Critical Parts (FCP) is restricted to actual manufacturers of the approval part due to limitations in existing government expertise. Consequently, prospective sources are advised to verify as to whether or not the part(s) in which they are interested fall in this category prior to seeking source approval. Information in this regard may be obtained through OC-ALC/BC at any time or the appropriate DLA procuring activity.

3. DEFINITIONS.

The following definitions shall apply as used in the context of QR's for Fracture Critical Parts and Durability Critical Parts unless otherwise stated in the specific QR.

3.1. **Approval Part/Item** - Part/Item for which source approval is sought.

3.2. **Category 1 Offeror** - A manufacturing/repair source, which in conjunction with their sub-vendors has performed all requisite processes on the approval part for Pratt&Whitney. Offerors in this category must provide documentation relevant to the approval part which satisfies all criteria specified under Proof of Capability in their respective QR's with the exception of those identified in 5.1.1, 5.1.2, and 5.2. In all cases the burden of proof shall reside with the Offeror.

- 3.3. **Category 2 Offeror** - Manufacturing/Repair source, which in conjunction with their sub-vendors, has performed all requisite processes on a similar part for an OEM. Offerors in this category must provide documentation relevant to a similar part(s) which satisfies all criteria specified under Proof of Capability. In all cases, the burden of proof lies with the Offeror.
- 3.4. **Critical Characteristic** - A part feature which, if non-conforming would result in probable loss of aircraft due to direct part failure or by causing other progressive part failures.
- 3.5. **Durability Critical Part** - A highly stressed part which cannot be completely inspected nondestructively; failure of which will result in a significant maintenance burden.
- 3.6. **Fabricate** - The manufacturing steps necessary for the making of new parts.
- 3.7. **Fracture Critical Part** - A highly stressed part which cannot be completely inspected nondestructively; failure of which will result in loss of aircraft due to non-containment or power loss preventing sustained flight, as a direct result of part failure or subsequent progressive failures.
- 3.8. **Inspection Method Sheets (IMS)** - document used to describe the steps involved in executing an inspection or series of inspections to include tooling, gages, fixtures, dimensions and other parameters necessary to execute the required inspections(s).
- 3.9. **Major Characteristic** - A part feature which, if non-conforming, could compromise the function of the part, resulting in a significant maintenance burden and/or reduction in weapon system performance.
- 3.10. **Manufacturing Process Sheets (MPS)** - document used to describe the steps involved in executing an operation or series of operations to include tooling, machinery, dimensions, speeds, feed rates, coolants, cutters, tape numbers and other operating and/or set-up parameters necessary to execute the operation.
- 3.11. **Material** - A general term referring to material at any stage in the manufacturing/repair process.
- 3.12. **NIST** - National Institute of Standards and Technology.
- 3.13. **Offeror** - Source furnishing a source approval package in an attempt to obtain engineering source approval to supply the approval part in its finished state to the U.S. Government.
- 3.14. **Original Equipment Manufacturer (OEM)** - Term typically applied to the source responsible for the original design and development of a product or system. In this case it shall refer to sources primarily responsible for the design and development of aircraft gas turbine engines similar to the Pratt&Whitney F100 engine, for a US DoD activity or a NATO country.

**BASIC TECHNICAL DATA PACKAGE REQUIREMENTS  
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3.15. **Production Quantities** - Quantities which establish a reasonable level of confidence in a prospective source's ability to consistently produce parts whose integrity is equivalent to that exhibited by parts which originally passed substantiation testing. As a minimum it shall be considered representative of several production lots or greater quantities commensurate with those specified in current solicitations or annual buy projections and shall be exclusive of quantities produced in experimental or developmental programs.

3.16. **Purchaser** - The Purchaser as defined in all applicable government specifications as well as all PWA specifications relative to the part described in this document shall refer to the U.S. Government contracting activity issuing the procurement requirement.

3.17. **QRSL** - Qualified Repair Source List, the listing of qualified repair sources, located in T.O. 2J-F100-13-1.

3.18. **Raw Material** - Ingot, bar, billet, or sheet stock used directly in the fabrication of the finished part or forgings/castings used in the fabrication of the finished part.

3.19. **Repair** - The processes and inspections necessary to restore parts to serviceable condition.

3.20. **Significant Process** - A process which is capable of producing alterations in the material structure of a part which cannot normally be evaluated without destructive testing and which can compromise the mechanical properties and ultimately the reliability of the part. Processes which are considered to be significant by OC-ALC/LPFR are listed in Appendix A.

3.21. **Similar part** - A part which satisfies all of the specific criteria for similarity as defined in the QR's for the approval part.

3.22. **Sub-vendor** - A source supplying material, products, and/or services to the Supplier as required in the performance of the contract. This term applies to all facilities other than the Supplier's facility including those of the same company.

3.23. **Technical Order** - A technical manual published by the Air Force containing (in this case) technical information required to develop inspection methods and repair processes for aircraft engine parts.

#### 4. DOCUMENTATION REQUIREMENTS.

4.1. Offerors must submit the following data on all parts referenced within their SAR in addition to data required in the QR:

4.1.1. A complete set of legible drawings for all assemblies, details, and sub-components. All dimensions shall be in the English System of Units.

4.1.2. A complete set of all specifications (top page only for Pratt&Whitney developed specifications) for all materials and manufacturing/repair processes identified on the drawings for the similar parts and sub-components thereof.

4.1.3. Substantiation of possession or the top page of all referenced Pratt&Whitney MCL standards.

4.2. Offerors shall include the following documentation on the approval part (Category I Offeror) or similar parts (Category II Offeror) to substantiate Proof of Capability:

4.2.1. Copies of purchase orders from purchaser to Offeror and Offeror to sub-vendors which define quantities ordered and all technical conditions or restrictions imposed. Copies of the most recent shipping documents applicable to the purchase order should also be provided. Shipping documents shall be stamped appropriately by the purchaser to indicate full release where on-site acceptance is specified by the purchase order. In addition, if the part was manufactured/repared for Pratt&Whitney, the Pratt&Whitney Requirements Control Card and Quality Assurance Document should be provided. The fact that a sub-vendor is a Pratt&Whitney LCS Supplier shall not relieve the Supplier of the responsibility of conducting following-on quality assurance surveillance to ensure that sub vendors are providing conforming material.

4.2.2. A copy of the Manufacturing/Repair Process Sheets (MPS) and Inspection Method Sheets (IMS) employed in the production of the part(s). Evidence of purchaser approval of the MPS is required. Summary of manufacturing/repair operations sheets, travelers, or routing sheets are not acceptable in lieu of MPS, except for some sheet metal parts. In the case of the latter routing sheets which define process sequence, forming tooling, non-conventional machining schedules, weld schedules, and braze schedules shall be provided. All schedules and technical control documents referenced in the MPS which specify process operating parameters shall be included. In all cases where an operation is governed by software, i.e., numerically controlled or automated operations a hard copy excerpt identifying manufacturing/repair process operating parameters must be provided. MPS shall remain confidential and may be stamped "proprietary" at the discretion of the Offeror. Failure to provide detailed MPS and IMS shall constitute grounds for disapproval.

4.2.3. Identification of all sub-vendors of significant processes and sub-components employed in the production/repair of the part(s) including the specific operations and/or sub-components provided by each sub-vendor.

4.2.3.1. For significant processes subcontracted, the Offeror must provide his method for insuring quality control and conformance to specification at the sub-vendor's plant. This should not only include identification of such procedures in the company Quality Manual but also physical evidence such as audit reports, surveys, and chemical and physical test

reports. If receiving inspection cannot verify conformance to specification, then chemical and physical test data along with in-work process control data must accompany each lot.

4.2.3.2. Repairs performed by sub-vendors shall be accomplished in accordance with work instructions specified in MPS, Inspection Method Sheets, schedules, and/or technical control plans which define the exact sequence of all production operations and all process variables and parameters of repair operations which may directly affect material structure, grain flow, mechanical properties, surface finish and/or direction or lay of the cutting action. The procedure shall also assure that work instructions have been approved by the Purchaser or the OEM specified by the applicable source certification requirements defined in section 6.4 of these QR's.

4.2.3.3. Certificates of test or conformance provided by sub vendors of significant processes are complete and supported by process data and numerical test results from and OEM-approved laboratory for the requisite testing, are representative of material received, and the material is in conformance with Purchaser requirements. Acceptance of incoming material based exclusively upon certificates of test/conformance shall be prohibited. Also, generic procedures such as "laboratory testing employed as necessary" are unacceptable. Specific test procedures utilized on wrought engine parts are required.

4.2.4. A summary of quality deficiencies experienced in fabrication/repair part during the last two years of production. The summary shall include but not be limited to all Material Review Board (MRB) actions, Quality Deficiency Reports (QDR's), Laboratory Quality Review Orders (LQROs), Supplier Report of Nonconformance (SRONs), Material Deficiency Reports (MDR's) and any other pertinent documentation as well as the coordination of the President and the Quality Assurance Manager. Coordination of the government quality assurance representative shall be included as well if government source inspection was conducted. Actions taken to resolve deficiencies identified including repair, rework or replacement of parts as well as the source primarily responsible for initiating, developing, and implementing corrective actions and the status thereof must also be provided.

4.2.4.1. The quality acceptance standards imposed in routine production acceptance by sub vendors shall be complete and OEM approved and the test methods employed in routing production acceptance are sufficient to verify compliance with these standards.

4.2.5. A detailed description of major similarities and differences between the "similar" part(s) and the approval part.

4.2.6. A specific description of value added by the OEM to the approval part or similar part(s) including but not limited to performance of manufacturing/repair processes or inspections, supply of raw material, forgings, castings, or sub-components, quality assurance surveillance of sub-vendors of significant processes, use of OEM tooling, fixtures, gages, or inspection master hardware, and use of OEM MPS, IMS or other process related data not referenced on part drawings. The Offeror shall demonstrate capability to fulfill "value added



" by Pratt&Whitney on the approval part as determined by OC-ALC/LPFR, as the cognizant Fighter Propulsion System Division Engineering Section.

4.2.7. A copy of summary of manufacturing/repair process sheets, travelers, or routing sheets which identify all significant manufacturing/repair processes **to be employed in the fabrication/repair of the approval part** for the U.S. Government. This documentation is subject to approval by OC-ALC/LPFR. As such, it shall include a provision for coordination on each page.

4.2.8. Identification of all proposed changes to the MPS and IMS submitted by Category I Offerors, as proof of capability. This requirement applies regardless of whether are not they are considered to be significant changes by the Offeror.

4.2.9. The Offeror must provide documentation to prove that their quality assurance system meets or exceeds the requirements as described in the attached document LPF-QAR-001.

4.2.10. If an Offeror has had a Quality or Process audit performed by the DoD or agent for the DoD in the last 3 years, the Offeror shall provide the findings and evaluation/rating.

## 5. SAR FORMAT.

5.1. Source Approval Requests (SAR's) should be submitted in a binder to preclude the loss of contractor data in handling. A hard or semi-hard cover notebook form (i.e. a three-ring binder or similar product), with a table a contents and tabs corresponding to the table of contents is preferable. This will significantly reduce the turn-around time for engineering evaluation as well as reduce the likelihood of oversight or loss of valuable data that could have a significant bearing on the outcome of the evaluation.

**END**

## **APPENDIX A**

### **SIGNIFICANT PROCESSES**

The following examples are typical processes considered significant in that they are capable of producing alterations to material structures, mechanical properties, and ultimately, item reliability, if performed improperly, and cannot normally be evaluated without destructive testing.

1. Casting Processes
2. Forging Processes
3. Heat Treatment and Surface Hardening Processes
4. Broaching
5. Grinding
6. Drilling, Reaming, and Boring
7. Milling
8. Finish Turning
9. Electrochemical Machining Processes (Cavity Sinking, Drilling, Grinding, etc.)
10. Chemical Milling
11. Electro-Discharge Machining
12. Electro-Stream Drilling
13. Laser Beam Metal Removal Processes
14. Electron Beam Metal Removal Processes
15. Peening Processes
16. Welding
17. Brazing
18. Metal Electroplating Processes
19. Coating Processes
20. Surface Finishing Processes (Honing, Sutton Barrel, etc.)
21. Cleaning of Titanium
22. Non-Destructive Testing such as: Magnetic Particle Inspection, Eddy Current, X-ray, Sonic, Fluorescent Penetrant

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1. APPLICATION.

- 1.1. This document applies to all qualification requirements for F100 engine parts designated as Fracture Critical or Durability Critical or as otherwise noted.
- 1.2. This document shall only apply to Category I Offerors. This restricts the availability of this waiver to those Offerors who have manufactured/repared the actual approval part for its Original Equipment Manufacturer (OEM).
- 1.3. It does NOT provide conditions of waiver for the requirement for pre-award qualification of prospective Offerors. It is limited in scope to the specific elements of the qualification requirements specified herein.
- 1.4. Definitions of terms used in this document are located in LPF-QR-001.

2. CONDITIONS.

- 2.1. The requirement that the Offeror must have fabricated/repared production quantities of the approval part for the OEM within the time period specified by the applicable qualification requirements may be waived in favor of a longer period of time provided that all of the following conditions are satisfied and documented by the Offeror:
  - 2.1.1. There are NO outstanding quality deficiencies of significance.
  - 2.1.2. There were NO significant quality deficiencies in the parts produced/repared. This must be supported by a summary of all quality deficiencies experienced in the last two years of production/repair for the OEM with the coordination of the Offeror's Plant Quality Assurance Manager and either the Plant Vice President or the Plant General Manager.
  - 2.1.3. There was NO significant value added by the OEM as described in LPF-QR-001. The Offeror shall also account for all significant processes that they did not perform on parts delivered to the OEM by identifying the source that performed the processes.
  - 2.1.4. There have been NO significant changes in Manufacturing/Repair Process Sheets since the part was last produced/repared for the OEM. Significant changes shall include but are not limited to changes in the following: Processes used, process sequence, equipment used, tooling design, processing location, and principal operating parameters. The Offeror shall provide the following documentation as substantiation:
    - 2.1.4.1. A copy of the OEM-approved manufacturing/repair process sheets employed in the production/repair of parts for the OEM
    - 2.1.4.2. A copy of the proposed manufacturing/repair process sheets for use in the production/repair of parts for the U.S. Government.
    - 2.1.4.3. A facilities list identifying all equipment in-house at the time the parts were in production/repair for the OEM.

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- 2.1.4.4. A current facilities list identifying all equipment in-house.
- 2.1.4.5. Identification of special tooling and gaging employed in the fabrication/repair and inspection of the parts for the OEM and evidence that it is still serviceable and in the possession of the Offeror or can be duplicated.
- 2.1.5. The time period specified by the qualification requirements shall not be waived for similar parts or for approval parts manufactured/repared for sources other then the OEM.
- 2.1.6. The requirement for a specific quality plan, if required by the applicable qualification requirements, shall not be waived.

**END**